



You have downloaded a document from  
**RE-BUŚ**  
repository of the University of Silesia in Katowice

**Title:** Psychopathy and procrastination: Triarchic conceptualization of psychopathy and its relations to active and passive procrastination

**Author:** Elżbieta Sanecka

**Citation style:** Sanecka Elżbieta. (2020). Psychopathy and procrastination: Triarchic conceptualization of psychopathy and its relations to active and passive procrastination. "Current Psychology" (17 Jan 2020), doi 10.1007/s12144-020-00604-8



Uznanie autorstwa - Licencja ta pozwala na kopiowanie, zmienianie, rozprowadzanie, przedstawianie i wykonywanie utworu jedynie pod warunkiem oznaczenia autorstwa.



UNIwersYTET ŚLĄSKI  
W KATOWICACH



Biblioteka  
Uniwersytetu Śląskiego



Ministerstwo Nauki  
i Szkolnictwa Wyższego



# Psychopathy and procrastination: Triarchic conceptualization of psychopathy and its relations to active and passive procrastination

Elżbieta Sanecka<sup>1</sup>

© The Author(s) 2020

## Abstract

The present study examined the relationships between potentially adaptive and maladaptive aspects of psychopathy distinguished within the triarchic model (i.e., boldness, meanness and disinhibition) and two types of procrastination, reflecting its functional and dysfunctional aspects (i.e., active procrastination and passive procrastination). Additionally, the potential mediating mechanisms underlying these associations were investigated. The results revealed that the three components of the triarchic model of psychopathy were related to different forms of procrastination in distinct ways. In particular, active procrastination displayed a positive link to boldness and meanness, whereas passive procrastination was found to be positively related to disinhibition and negatively to boldness. Furthermore, two parallel multiple mediation analyses demonstrated the mediating effects of individual difference variables (i.e., impulsiveness, negative affectivity, general self-efficacy) on these relationships. As hypothesized, impulsiveness and negative affectivity partially mediated the association between disinhibition and passive procrastination, while self-efficacy partially mediated the relationship between boldness and active procrastination. The paper concentrated on the theoretical implications of these findings for understanding how different psychopathy-related traits are related to different aspects of procrastination.

**Keywords** Procrastination · Active procrastination · Passive procrastination · Psychopathy · Triarchic model

## Introduction

Procrastination is usually depicted as a deliberate delay in starting or completing task-related activities (Ferrari et al. 2005) and described in terms of self-regulatory failure (Steel 2007). In achievement-oriented, individualistic societies it is seen as a morally reprehensible, unacceptable, dysfunctional habit, bringing detrimental consequences for the individual and the society (van Eerde 2003a, b). However, despite the dominance of such a negative view on procrastination in the psychological literature, recent research suggests the existence of an alternative type of procrastination, reflecting potentially functional aspects of this phenomenon (Fermie et al. 2018). According to Chu and Choi (2005), in addition to passive procrastination, resulting from self-regulatory deficits and connected with negative outcomes, it is possible to identify active procrastination. This form of procrastination also

manifests in putting off necessary tasks. However, as opposed to its passive counterpart, the delays are made intentionally and serve as a way to regulate own motivation (Wessel et al. 2019). In the case of active procrastinators, the preference to work under time pressure does not disturb the ability to finish tasks on time and achieve positive personal outcomes (Choi and Moran 2009; Chu and Choi 2005).

Previous research showed that, as opposed to those who passively procrastinate, active procrastinators are able to self-regulate own learning behaviors, have better academic performance (Corkin et al. 2011) and display a wide range of positive features, including high self-efficacy, more effective time management and reliance on task-oriented stress coping strategies (Chu and Choi 2005). With regard to personality traits constituting the Big Five model, active procrastination was reported to be positively associated with emotional stability and extraversion, whereas passive procrastination was negatively linked to conscientiousness and emotional stability (Choi and Moran 2009; Kim et al. 2017). These findings indicate the importance of individual difference variables, including personality traits for understanding how both types of procrastination are expressed in academic and non-academic settings.

✉ Elżbieta Sanecka  
elzbieta.sanecka@us.edu.pl

<sup>1</sup> Institute of Psychology, University of Silesia, Grażyńskiego 53, 40-126 Katowice, Poland

The empirical evidence suggests that socially aversive dispositional characteristics comprising the Dark Triad of personality (i.e., Machiavellianism, narcissism and psychopathy) play an important role in explaining impulsive behaviors, resulting from self-regulatory deficits (e.g., Crysel et al. 2013; Malesza and Ostaszewski 2016). Subclinical psychopathy, encompassing high impulsivity, thrill-seeking, low empathy and anxiety (Paulhus and Williams 2002) may be expressed in procrastination, which is connected with impulsiveness and weak self-control (Steel 2007; van Eerde 2003b). However, within the perspective of individual differences and personality psychology only limited research exists that links different forms of procrastination to the “dark” personality traits. Thus far, the only study on psychopathy and procrastination by Lyons and Rice (2014) has concentrated on the associations between the Dark Triad of personality and avoidant and arousal procrastination. Its results showed that psychopathy was the strongest, albeit weak, predictor of procrastination among the Dark Triad traits, and suggested the existence of discrepancies in relationships between separate facets of psychopathic personality and distinct aspects of procrastination, such as avoidant and arousal procrastination. Nevertheless, the nature of associations between psychopathy and procrastination remains largely unclear, as the relationships between maladaptive and potentially adaptive aspects of both constructs with regard to potential mediating mechanisms explaining this linkage have not been analyzed yet. Meanwhile, as Choi and Moran (2009) stated, active and passive procrastination results from separate underlying self-regulatory mechanisms affecting task-related behaviors. In line with this view, passive procrastination is derived from poor self-regulation, impulsiveness, negative self-efficacy beliefs and less effective coping strategies with negative emotions and stress. In contrast, active procrastination arises from more positive self-beliefs, better self-control and greater emotional stability (Chu and Choi 2005; Choi and Moran 2009; Kim et al. 2017). As a result, self-efficacy, impulsivity, and positive and negative affectivity may serve as proximal predictors of distinct forms of procrastination. In turn, it is possible that different components of psychopathy function as more distal predictors of active and passive procrastination.

The current study is aimed at extending previous research on psychopathy and procrastination by Lyons and Rice (2014) by comparing how active and passive procrastination are linked to distinct dimensions of psychopathy differentiated within the triarchic framework proposed by Patrick et al. (2009) and testing the potential mediating role of four individual difference variables, i.e. impulsiveness, self-efficacy, positive and negative affectivity. Analyzing these two forms of procrastination in relation to separate aspects of psychopathy in the general population with regard to mediation effects may help to better understand how subclinical psychopathy leads to negative consequences, resulting from self-regulatory

deficits, and manifests in less detrimental effects. Due to reliance in the present study on the triarchic model and the active-passive distinction in procrastination, it would be possible to broaden our understanding of how psychopathic individuals are able to successfully complete necessary tasks and capture the behavioral differences among various psychopathic personalities.

## Theoretical Background

### Active and Passive Procrastination

In line with the conceptualization proposed by Chu and Choi (2005), active procrastination reflects functional aspects of the purposeful delay and depicts such core elements as an intentional decision to delay something, motivation and preference to work under time pressure, and ability to finish tasks on time, which results in positive, satisfactory personal outcomes. On the contrary, passive procrastination is characterized as a dysfunctional type of task delay, treated as a result of an inability to plan own actions and meet deadlines (Choi and Moran 2009). The existing empirical data generally support the notion that active and passive procrastination may be seen as theoretically and empirically distinct, non-overlapping constructs with separate nomological networks (Chu and Choi 2005; Kim et al. 2017; Kim and Seo 2015). Several studies indicated that both forms of procrastination are influenced by different bright-side dispositional variables (Corkin et al. 2011; Choi and Moran 2009; Hensley 2014; Kim et al. 2017). However, in previous research on individual difference characteristics influencing active and passive procrastination, socially aversive personality traits such as psychopathy have been largely overlooked. In particular, there is only one study comparing the possible relationships between the “dark” personality trait such as psychopathy and procrastination (Lyons and Rice 2014). Meanwhile, investigating associations between psychopathy and procrastination with the use of the triarchic model (Patrick et al. 2009) and the theoretical proposal developed by Chu and Choi (2005) may shed new light on adaptive and maladaptive aspects of both constructs. These conceptualizations offer a more nuanced, alternative approach to both psychopathy and procrastination by emphasizing their potential functionality. Consequently, the present study may help to determine under what conditions psychopathy leads to less harmful consequences.

### The Triarchic Conceptualization of Psychopathy

In clinical literature, psychopathy is widely defined as a personality disorder represented by the constellation of affective, interpersonal and behavioral features (Hare 2003) distinct from antisocial personality disorder (ASPD) (Smith and

Lilienfeld 2013). In contrast, as a subclinical construct, psychopathy is treated as a continuous variable normally distributed in the general population (Neumann and Hare 2008), involving such psychological characteristics as high impulsivity, thrill-seeking and low empathy (Paulhus and Williams 2002).

Criminal psychopathy in clinical tradition is linked to various negative outcomes, including violent/versatile criminal behaviors (Campbell et al. 2004), recidivism (Hemphill et al. 1998), aggressive misbehaviors in institutional settings (Edens and Campbell 2007) and relatively weak response to treatment (Skeem et al. 2011). Research on psychopathy in community samples showed that psychopathic individuals engage in a broad spectrum of unethical or antisocial (but not definitely criminal) acts, including violent behaviors, increased alcohol consumption (Hare 2003; Neumann and Hare 2008), suicide attempts, drug dependence (Coid et al. 2009), and in intimate relationships with risky and violent sexual behaviors, negative attitudes toward partners and infidelity (Williams et al. 2005). In the workplace, corporate psychopathy was reported to be positively associated e.g. with bullying and unfair supervision (Boddy 2011), careerism (Chiaburu et al. 2013), white-collar crimes, aggression and counterproductive work behavior, unethical decision making (Smith and Lilienfeld 2013), and negatively with management skills, ability to act as a team player, and performance (Babiak et al. 2010).

Recently, in accordance with the research trend aimed at searching some positive sides of the “dark” traits (Judge et al. 2009; Spain et al. 2014), a growing number of studies on psychopathy in non-institutionalized settings elucidate the potentially adaptive aspects of the syndrome, linked to the notion of the successful psychopath (described also as a subclinical or noncriminal psychopath) (Hall and Benning 2006; LeBreton et al. 2006; Smith and Watts 2014). Generally, such individuals display less maladaptive behaviors and are able to achieve success in different life areas despite possessing many core features of psychopathy (Lilienfeld et al. 2015). For example, past studies indicated that certain psychopathic traits were linked to higher conscientiousness (Mullins-Sweatt et al. 2010), entrepreneurial tendencies and abilities (Akhtar et al. 2013), professional satisfaction and material success (Eisenbarth et al. 2018) and successful political leadership appraisals (Lilienfeld et al. 2012). Such associations mainly refer to primary psychopathy, which entails affective and interpersonal features of psychopathy, including callousness, lack of empathy and fearlessness (Akhtar et al. 2013; Lee and Salekin 2010; Skeem et al. 2007), and fearless dominance, characterized by social dominance, immunity to anxiety, and fearlessness (Lilienfeld et al. 2012).

On the theoretical basis, the triarchic conceptualization of psychopathy proposed by Christopher Patrick and colleagues (Patrick 2010; Patrick et al. 2009) may be particularly useful

in research on the adaptive and maladaptive aspects of psychopathy in the general population (e.g., Drislane et al. 2014b; Poy et al. 2014). This integrative model identifies three phenotypically distinct, but intertwined, subcomponents of the syndrome, treated as dispositional constructs, i.e. boldness, meanness and disinhibition (Drislane and Patrick 2017; Patrick and Drislane 2015; Patrick et al. 2009). Each component reflects different psychological characteristics of psychopathy and is derived from separate conceptions and research traditions (Patrick et al. 2012). Boldness reflects adaptive features of psychopathic personality and mostly refers to the concept of successful psychopathy. In the triarchic model, it is characterized by fearlessness, social dominance, efficacy in interpersonal relations, self-confidence, emotional stability, high tolerance for stress and risk. Meanness (callous-unemotionality) manifests in empathy deficits, inability to form close bonds, exploitativeness, manipulativeness and aggression. Disinhibition entails deficits in impulse control, planning, irresponsibility and tendency toward externalizing behavior problems (Drislane et al. 2014a; Patrick et al. 2009, 2012).

By identifying separate phenotypic manifestations of psychopathy traits and indicating distinct etiologic and developmental mechanisms underlying them, Patrick et al. (2009) emphasized the heterogeneous and multidimensional nature of psychopathy (Lilienfeld 2018). In line with this approach, the vast majority of research involving the triarchic framework concentrates on the analysis of the specific correlation patterns with external criteria for each dimension. To date, empirical data indicate that the psychopathy facets distinguished in the triarchic framework have distinct nomological networks and can bring different consequences (Anestis et al. 2019; Craig et al. 2013). In particular, boldness was connected to a lesser extent to criminal and antisocial behavioral manifestations of psychopathy (Anestis et al. 2019), higher levels of well-being and stress immunity (Patrick and Drislane 2015), and a diminished tendency to engage in counterproductive organizational behaviors in the workplace (Neo et al. 2018). In contrast to boldness, meanness and disinhibition were negatively associated with psychological characteristics accompanying successful psychopathy, including socioeconomic status and personality functioning (Persson and Lilienfeld 2019).

## Psychopathy and Procrastination

Thus far, the linkage between psychopathy and procrastination has been explained from the evolutionary perspective. Within the evolutionary framework, for those high in psychopathy and the other Dark Triad personality traits, procrastination may represent a functional solution based on the fast life history strategy, in which immediate benefits are valued above long-term rewards (Lyons and Rice 2014). Previous



studies confirmed the importance to use the evolutionary approach in research on the relation between psychopathy and procrastination and indicated that psychopathic individuals are more likely to procrastinate in an unpredictable environment in order to enhance the relation between costs and benefits (Chen and Chang 2016). Moreover, from the evolutionary perspective, different dimensions of psychopathy may be related to different types of procrastination. Accordingly, in the study by Lyons and Rice (2014), primary psychopathy (which entails lack of empathy, callousness, and fearlessness) was associated with arousal procrastination (i.e., putting off tasks to seek excitement) in women. In contrast, secondary psychopathy (characterized by higher anxiety and greater tendency to display antisocial behaviors) was associated with avoidance procrastination (i.e., putting off activities to avoid failure) in men and women (Lee and Salekin 2010; Skeem et al. 2007; Steel 2010). Nevertheless, despite some conceptual similarities between active-passive and arousal-avoidant distinctions of procrastination (Hensley 2014) as well as the possibility to empirically link the primary-secondary dichotomy of psychopathy with the triarchic framework (Drislane et al. 2014a), both the conceptualization of active and passive procrastination and the triarchic model of psychopathy seem to better explain the relationships between adaptive and maladaptive features of both constructs than the concepts used in the study by Lyons and Rice (2014). As both the active-passive differentiation and the triarchic model invoke the adaptive-maladaptive dichotomy, the theoretical framework applied in the present study may be particularly useful in highlighting positive-adjustment aspects of psychopathy and procrastination.

The existing theoretical and empirical work concentrates on the dysfunctional types of psychopathy and procrastination, which present similar correlation patterns with different psychological features, and implies that they may be connected with regard to common self-regulatory problems (Lyons and Rice 2014). Indeed, meta-analyses indicate that passive procrastination arises from self-regulatory deficits and is positively correlated with impulsivity, sensation seeking, boredom proneness, distractibility, and negatively with self-control along with conscientiousness (Steel 2007; van Eerde 2003b). Similarly, within different theoretical models impulsivity and self-regulatory problems are considered characteristic of the psychopathic personality (Hare and Neumann 2008; Hart and Dempster 1997; Poythress and Hall 2011), and in past research psychopathy was linked to dysfunctional impulsivity, low conscientiousness and problems with self-control (Jones and Paulhus 2011).

Within the triarchic framework, disinhibition is identified as being directly linked to impulsivity due to the accompanying poor behavioral control, lack of long-term goals, reliance on immediate gratification and externalizing problems (Patrick et al. 2009). Previous findings proved that on a

behavioral level disinhibition manifests in higher levels of impulsivity and an inability to plan ahead, characteristic of a low behavioral inhibition system (Drislane et al. 2014a; Sellbom and Phillips 2013; Weidacker et al. 2017). Given these considerations, the psychopathic tendency to engage in irrational, impulsive, disinhibited acts (in the triarchic model mainly embodied by disinhibition) may take the form of dysfunctional, passive procrastination, involving unintentional delays resulting from problems with time control (Choi and Moran 2009). In other words, disinhibited individuals may be more likely to passively procrastinate, mainly due to an inability to self-control. Similarly, meanness might be also related to passive procrastination, as this dimension of psychopathy encompasses excitement seeking through cruelty (Patrick et al. 2009) and was reported to be negatively associated with conscientiousness (Poy et al. 2014) and positively associated with low behavioral control (Sellbom and Phillips 2013) along with different forms of impulsivity (Weidacker et al. 2017). Therefore, those high in meanness may show a greater tendency to passively procrastinate due to both low self-control and increased need for stimulation.

However, several studies stressed impulsivity as a key syndrome of some types of psychopathy (i.e., primary psychopathy and “successful psychopathy”) (Poythress and Hall 2011; Snowden and Gray 2011), thus raising the possibility that certain subdimensions of psychopathy may manifest themselves in various acts of functional impulsivity (Jones and Paulhus 2011), including deliberate delays aimed to increase stimulation. This means that boldness (seen as potentially advantageous and adaptive dimension of psychopathy) may be reflected by the tendency to actively procrastinate, representing a more functional side of impulsive behaviors. Past research proved that although all three facets of psychopathy from the triarchic model were linked to various aspects of impulsivity, only those individuals high in boldness tended to plan ahead and engage in instrumental risk taking (Weidacker et al. 2017).

## Mediating Mechanisms

Based on theoretical and empirical grounds, several individual difference variables can be identified as potential mediators in the relationships between various aspects of psychopathy and procrastination. Firstly, two individual difference constructs, i.e. impulsivity and negative affectivity, may at least in part mediate the link between disinhibition and passive procrastination. Because of high impulsivity, irresponsibility, deficient inhibitory control and externalizing tendencies (Patrick et al. 2009), disinhibition may manifest in passive procrastination through impulsivity. Additionally, due to a greater tendency to experience negative emotions and increased stress reactivity (Drislane et al. 2014a; Stanley et al. 2013), disinhibition may serve as a dispositional variable that translates into negative

affectivity, which in turn, increases the tendency to passive procrastination. Accordingly, meta-analytic results indicate that impulsivity and negative affectivity are positively associated with passive procrastination (Steel 2007; van Eerde 2003b). In turn, other studies showed that passive procrastinators reported elevated stress and depression, more frequently employed emotion-oriented stress coping strategies, had problems with self-regulation and effective time management (Choi and Moran 2009; Chu and Choi 2005; Corkin et al. 2011). These findings suggest that disinhibition may lead to an unintentional, passive form of delay, partially owing to a greater impulsivity and negative affectivity characterizing this type of procrastinator. Thus, in face of the necessity to complete a task before deadline, those high in disinhibition on the dispositional basis may react in more impulsive manners and experience less positive feelings. As a result, it is possible that their impulsivity and negative affectivity may lead to unintentional and passive task delays.

With regard to the relation between boldness and active procrastination, self-efficacy and positive affectivity are likely to serve as mediators. As boldness manifests in low stress reactivity, high emotional stability, self-confidence and sensation seeking (Patrick et al. 2009), individuals high in this trait should be calmer under pressure resulting from working to tight deadlines, experience more positive feelings in regard to task-related activities and tend to believe that they successfully accomplish a task despite the limited time. These positive beliefs and affective states that adopt the form of dispositional factors may result in a greater propensity to undertake deliberate, strategic acts of delay. Consequently, in previous research boldness was positively linked to indicators of positive emotionality and stress immunity (Driscoll et al. 2014a), as well as with self-esteem and self-efficacy facet of conscientiousness from the International Personality Item Pool (IPIP-120) questionnaire (Donnellan and Burt 2016). Additionally, active procrastination was repeatedly reported to be associated with higher self-efficacy, emotional stability and employing task-oriented strategies to cope with stress (Cao 2012; Choi and Moran 2009; Chu and Choi 2005; Corkin et al. 2011). Based on these results, it is expected that the above constructs (i.e., self-efficacy and positive affectivity) are likely to explain the associations between boldness and active procrastination.

## The Current Study

The first aim of the present study was to investigate the relations between noncriminal psychopathy and different types of procrastination, reflecting its functional and dysfunctional aspects. In order to stress the heterogeneous nature of psychopathy and identify unique associations between separate dimensions of psychopathy and the tendency to procrastinate in the general population, the triarchic

conceptualization of psychopathy proposed by Christopher Patrick et al. (2009) was applied. Three subdimensions of psychopathy differentiated within the triarchic framework (boldness, meanness, disinhibition) were analyzed in relation to two separate procrastination styles, discriminated by Chu and Choi (2005), i.e. active and passive procrastination. Although Choi and Moran (2009) additionally discerned four components of active procrastination (preference for pressure, intentional decision to procrastinate, ability to meet deadlines and outcome satisfaction), the dimensionality of the construct has not been supported by the majority of previous research (Chowdhury and Pychyl 2018; Hensley 2014). Therefore only the composite scale was considered, which is consistent with the prevailing approach in the studies on active procrastination. Given the preliminary investigations on the relationships between various manifestations of psychopathy and procrastination (Lyons and Rice 2014) and the character of the analyzed constructs (c.f. Patrick et al. 2009; Chu and Choi 2005), distinct patterns of interrelationships were expected between functional and dysfunctional aspects of both variables. Given that past research indicated that gender plays an important role in the expression of components of the triarchic model of psychopathy and men reported higher scores than women in the TriPM subscales (e.g., Poy et al. 2014; Sica et al. 2015), gender was controlled in the present study.

The second aim of the present study was to determine whether the individual difference variables mediate the relationships between separate psychopathy dimensions and procrastination types. It was expected that each component of psychopathy translates into different dispositional and temperamental characteristics, which subsequently manifest themselves in the form of various activities connected with task-related delay. To clarify the psychological mechanisms underlying the linkage between psychopathy and procrastination, several potential mediators of these relationships were proposed, including self-efficacy, impulsiveness, positive and negative affectivity. As other variables (e.g., motivational, dispositional or situational) might explain the associations between psychopathy dimensions and different kinds of procrastination (Steel 2007), partial mediation effects were expected in the present study.

Based on the empirical and theoretical evidence, the following hypotheses were formulated:

Hypothesis 1. Disinhibition and meanness are positively related to passive procrastination and unrelated to active procrastination.

Hypothesis 2. Boldness is positively related to active procrastination and unrelated to passive procrastination.

Hypothesis 3. Impulsiveness and negative affectivity partially mediate the relationship between disinhibition and passive procrastination.

Hypothesis 4. Self-efficacy and positive affectivity partially mediate the relationship between boldness and active procrastination.

## Methods

### Participants and Procedure

The sample comprised 280 undergraduate and postgraduate students from different universities in southern Poland. The participants included 168 women (60%) and 112 men (40%), aged 17–44 ( $M = 21.63$ ;  $SD = 2.73$ ). The sample was diverse in terms of academic institution, year at university and academic majors. Accordingly, in the present study 153 (54.64%) participants majored in humanities, 52 (18.57%) in economics and management, 29 (10.36%) in engineering, 20 (7.14%) in social sciences, 11 (3.92%) in medical sciences, and 15 (5.36%) declared other fields of study. The subjects, who participated in the current study on a voluntary basis and without compensation, were asked to complete a set of the self-reported anonymous questionnaires. This required approximately 15–20 min to complete. Two measures of procrastination used in the present study (the Active Procrastination Scale and the Tuckman Procrastination Scale) were translated from English using the back-translation method.

### Measures

**Psychopathy** Psychopathy was measured with the Polish shortened version of the Triarchic Psychopathy Measure (TriPM; Patrick 2010; Polish version: Pilch et al. 2015). The questionnaire derived from the triarchic conceptualization of psychopathy which distinguishes three distinct components of psychopathy, i.e. boldness, meanness and disinhibition (Patrick et al. 2009). The Polish adaptation of the instrument (TriPM-41) includes 41 items with a 4-point response rate (1 - “true”, 2 - “somewhat true”, 3 - “somewhat false”, 4 - “false”) and is composed of three subscales, reflecting phenotypically separate dimensions of psychopathy, i.e. boldness (15 items), meanness (10 items) and disinhibition (16 items). Representative items for the specific subscales include the following: “I’m afraid of far fewer things than most people” (for boldness), “How other people feel is important to me” (for meanness – item inverted) and “I jump into things without thinking” (for disinhibition). The TriPM-41 demonstrated good psychometric properties as a measuring instrument of psychopathy in the general population (Pilch et al. 2015). For the current study, estimated reliabilities for boldness, meanness and disinhibition were .87, .90 and .81, respectively.

**Active Procrastination** Active procrastination was measured with the Active Procrastination Scale (APS; Choi and Moran 2009), which is a 16-item self-report measure of active procrastination depicted as a functional strategy deliberately chosen by the individual to successfully perform the task. Participants rate diagnostic statements on a 7-point Likert-type scale, ranging from 1 (“Not at all true”) to 7 (“Very true”). Sample items include: “To use my time more efficiently, I deliberately postpone some tasks” and “I intentionally put off work to maximize my motivation”. Higher scores on the Active Procrastination Scale indicate a greater tendency to actively procrastinate in different social contexts. In the present sample, the scale had high internal consistency ( $\alpha = .82$ ).

**Passive Procrastination** The Tuckman Procrastination Scale (TPS; Tuckman 1991) was used to assess the passive form of procrastination. The measure consists of 16 items with a 4-point rating scale (from 1 – “That’s not me for sure” to 4 – “That’s me for sure”) and is used to assess the maladaptive form of procrastination regarded as the consequence of self-regulatory failure (Kim and Seo 2015). Items capture dysfunctional delay tendency (e.g. “I needlessly delay finishing jobs, even when they’re important.”, “When I have a deadline, I wait until the last minute.”) in the academic and general contexts. A higher score indicates a higher level of passive procrastination. In the current study internal consistency coefficient for the scale was satisfactory ( $\alpha = .85$ ).

**Positive and Negative Affect** Positive and negative affectivity was measured using the Polish version of the Positive and Negative Affect Schedule (PANAS; Watson et al. 1988; Polish version: Brzozowski 2010). The PANAS is a 20-item measurement tool consisting of two 10-item mood subscales developed to measure positive and negative affect. Participants are asked to rate the general level of their affective state on the 5-point Likert-type scale, ranging from 1 (“Very slightly or not at all”) to 5 (“Extremely”). Sample adjectives for positive affect (PA) are: “Interested”, “Excited”, “Enthusiastic”. Sample adjectives for negative affect (NA) include: “Distressed”, “Upset”, “Scared”. A higher score for each subscale indicates greater intensity of positive or negative emotions, respectively. Cronbach’s alpha for positive affect was .86, and for negative affect .88.

**Impulsiveness** The Barratt Impulsiveness Scale (BIS-11) developed by Patton et al. (1995; Polish adaptation by Grzesiak et al. 2008) assesses individual differences in impulsiveness. The 30-item questionnaire has good psychometric properties and is the most widely used scale to measure personality/behavioral construct of impulsiveness (Stanford et al. 2009). The response scale ranges from 1 (“Rarely/Never”) to 4 (“Almost Always/Always”). Illustrative items are “I do things without thinking” and “I act on the spur of the moment”. The

higher the score, the greater impulsiveness shown by the respondent. In the present study, Cronbach’s alpha for the BIS-11 was .78.

**General Self-Efficacy** The General Self-Efficacy Scale (GSES; Schwarzer and Jerusalem 1995; Polish adaptation: Schwarzer et al. 2001) was applied to measure personal general ability to cope with a broad spectrum of stressful or demanding situations in different areas of life. The GSES is a 10-item measure with possible response rate from 1 (“no”) to 4 (“yes”). Each response is scored positively. Higher scores indicate a higher level of general self-efficacy. Exemplary items include “I can solve most problems if I invest the necessary effort” and “Thanks to my resourcefulness, I can handle unforeseen situations”. Cronbach’s alpha for this study was .83.

## Results

### Data Analysis

Statistical analyses were performed using SPSS Statistics 25.0. To test the hypotheses, correlational analysis was conducted, followed by a hierarchical regression analysis. Finally, to clarify the mediating effects of individual differences factors in the interplay of different aspects of psychopathy and procrastination, two parallel multiple models were computed with the use of SPSS macro PROCESS (Hayes 2013). Normality of the data was checked visually on Q-Q plots along with frequency distributions, and through the K-S test with Lilliefors correction. Most study variables, except for positive affectivity and passive procrastination, were not normally distributed, implying the use of Spearman’s correlation coefficient. Considering the significant number of estimators

included in the correlational analysis, Bonferroni correction was applied for correlation coefficients. One observation was identified as an influential outlier, using Cook’s distance measures, leverage values, and studentized residuals, and was excluded from further analyses. In regard to the regression models calculated in the present study, all relationships between the independent and dependent variables were linear, no influential points were identified, and the assumption of homoscedasticity was met. Additionally, there was no evidence of autocorrelation in the residuals (with the Durbin-Watson statistics at the levels of 1.85 and 1.83) or multicollinearity (as VIF statistics ranged from 1.00 to 2.68).

G\*Power 3.1.9.4 software (Faul et al. 2007) was used to conduct a priori power analysis. The minimum sample size required to achieve statistical power of .95 at .05 significance level with medium effect size ( $f^2 = 0.15$ ) for multiple regression model with 8 predictors was 160. Therefore, the sample size of 280 participants (279 after removing one outlying observation in the correlational and regression analyses) in the present study was appropriate.

### Intercorrelations among Study Variables

Means, standard deviations, Spearman’s correlations and alpha coefficients for gender, three dimensions of psychopathy differentiated within the triarchic model, individual difference variables and two types of procrastination are reported in Table 1. Gender (dummy coded 0 = males, 1 = females) was negatively associated with all three psychopathy components, confirming that men score higher in psychopathy.

In accordance with Hypotheses 1 and 2, separate psychopathy-related traits were differently correlated to various types of procrastination. As predicted in Hypothesis 1, disinhibition was strongly positively associated with passive

**Table 1** Means, standard deviations and intercorrelations between study variables

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Gender	–									
(2) Boldness	<b>–.19*</b>	–								
(3) Disinhibition	<b>–.23*</b>	.02	–							
(4) Meanness	<b>–.44*</b>	.10	<b>.31*</b>	–						
(5) Self-efficacy	–.09	<b>.62*</b>	–.13	–.05	–					
(6) Impulsiveness	.01	–.05	<b>.55*</b>	.14	<b>–.18*</b>	–				
(7) Positive affectivity	–.13	<b>.64*</b>	–.08	–.02	<b>.60*</b>	–.05	–			
(8) Negative affectivity	.12	<b>–.47*</b>	<b>.37*</b>	–.01	<b>–.39*</b>	<b>.26*</b>	<b>–.27*</b>	–		
(9) Active procrastination	–.15	<b>.44*</b>	–.01	.16	<b>.36*</b>	–.01	<b>.28*</b>	<b>–.25*</b>	–	
(10) Passive procrastination	–.03	<b>–.23*</b>	<b>.46*</b>	.13	<b>–.36*</b>	<b>.52*</b>	<b>–.27*</b>	<b>.27*</b>	<b>–.18*</b>	–
<i>M</i>	–	25.64	12.29	6.88	31.29	68.27	34.01	21.58	65.75	39.88
<i>SD</i>	–	8.11	6.85	5.73	4.07	10.42	6.69	7.60	15.47	7.71

*N* = 279. Gender is coded as 0 = male, 1 = female. Bonferroni-corrected (.05/17 = .003) Spearman correlation coefficients significant at *p* < .05 are denoted by\* and highlighted in bold



procrastination and unrelated to active procrastination. However, meanness was found to be unrelated to active and passive procrastination. Boldness displayed an expected positive link to active procrastination and an additional negative association with passive procrastination, thus partially supporting Hypothesis 2.

Impulsiveness and negative affectivity were positively correlated to disinhibition and passive procrastination. General self-efficacy and positive affectivity were positively related to boldness and active procrastination. These results corresponded with the mediation hypotheses, indicating that impulsiveness, self-efficacy, positive and negative affectivity may be identified as possible mediators.

### Hierarchical Regression Analysis

In the next step, two series of three-step hierarchical regression analyses were conducted to predict active and passive procrastination. Gender as control variable was entered into regression equations in step 1, psychopathy dimensions (i.e., boldness, meanness, disinhibition) in step 2, and four individual difference variables (i.e., impulsiveness, positive affectivity, negative affectivity, self-efficacy) in step 3. Both regression models for passive procrastination proved statistically significant. In step 1 ( $F(1, 277) = .00, p > .05$ ) gender was nonsignificant. In step 2 ( $F(3, 274) = 38.65, p < .001$ ) disinhibition served as a positive predictor, while boldness was a negative predictor, cumulatively explaining additional 30% of the variance in passive procrastination. In step 3 ( $F(4, 270) = 16.07, p < .001$ ) disinhibition remained a significant positive predictor, whereas impulsiveness and self-efficacy emerged as two new predictors, accounting for an additional 14% of the variance in passive procrastination. Similarly, the models predicting active procrastination were found to be significant. In step 1 ( $F(1, 277) = 6.34, p < .05$ ) gender was significant. In step 2 ( $F(3, 274) = 23.47, p < .001$ ), boldness and meanness positively predicted active procrastination, explaining additional 20% of its variance. In the final model ( $F(4, 270) = 2.26, p > .05$ ), both boldness and meanness remained positive predictors, and self-efficacy appeared to positively predict active procrastination. These results showed that the individual difference variables (i.e., impulsiveness, positive and negative affectivity, general self-efficacy) predict different types of procrastination beyond psychopathy-related traits (Table 2).

### Mediation Analysis

In order to examine the mediating effects of individual difference variables on the relationships between distinct aspects of psychopathy and procrastination, SPSS macro PROCESS was used (Hayes 2013). The bias-corrected

bootstrapping method involving 95% confidence intervals of 5000 resamples was used. To test Hypotheses 3 and 4, two separate multiple mediation analyses were conducted. Table 3 presents the summary statistics for the calculated mediation models.

The mediating role of impulsiveness and negative affectivity in the relation between disinhibition and passive procrastination was tested within the first model. The bootstrap results indicated that both indirect paths for impulsiveness (indirect effect = .26, bootstrapped  $SE = .05, 95\%CI = .18, .36$ ) and negative affectivity (indirect effect = .05, bootstrapped  $SE = .02, 95\%CI = .005, .10$ ) were significant, thus fully confirming Hypothesis 3. As expected, disinhibition was positively linked to impulsiveness ( $B = .83, SE = .08, t = 10.75, p < .001$ ) and negative affectivity ( $B = .40, SE = .06, t = 6.43, p < .001$ ), while impulsiveness ( $B = .31, SE = .04, t = 7.39, p < .001$ ) and negative affectivity ( $B = .12, SE = .05, t = 2.25, p < .05$ ) were associated with increased passive procrastination. The total indirect effect for the overall model including both mediators was statistically significant (indirect effect = .31, bootstrapped  $SE = .05, 95\%CI = .21, .41$ ). The mediation analysis indicated that impulsiveness and negative affectivity partially mediated the relation between disinhibition and passive procrastination. When testing for these mediating variables, the initial positive association between disinhibition and passive procrastination ( $B = .53, SE = .06, t = 8.78, p < .001$ ) remained significant ( $B = .22, SE = .07, t = 3.28, p < .01$ ).

Within the second multiple mediation model, the hypothesized mediating effects of general self-efficacy and positive affectivity on the linkage between boldness and active procrastination were investigated. The obtained data partially confirmed Hypothesis 4. The full mediation model was found to be significant for self-efficacy (indirect effect = .21, bootstrapped  $SE = .10, 95\%CI = .01, .43$ ), and nonsignificant for positive affectivity (indirect effect = .02, bootstrapped  $SE = -.09, 95\%CI = -.16, .19$ ). In particular, boldness was positively related to self-efficacy ( $B = .33, SE = .02, t = 14.59, p < .001$ ), which in turn was positively linked to active procrastination ( $B = .65, SE = .29, t = 2.22, p < .05$ ). On the other hand, boldness was strongly positively associated with positive affectivity ( $B = .52, SE = .04, t = 13.75, p < .001$ ), which was not related to active procrastination ( $B = .03, SE = .17, t = .17, p > .05$ ). The total indirect effect for the overall model including both mediators displayed statistical significance (indirect effect = .23, bootstrapped  $SE = .11, 95\%CI = .01, .45$ ). The positive association between boldness and active procrastination ( $B = .80, SE = .11, t = 7.60, p < .001$ ) after entering two possible mediating variables in the model decreased in value, however still remained significant ( $B = .57, SE = .15, t = 3.76, p < .001$ ), thus indicating partial mediation by self-efficacy.

**Table 2** Hierarchical regression analysis predicting active and passive procrastination

Variable	Passive procrastination			Active procrastination		
	<i>B (SE)</i>	<i>B</i>	$\Delta R^2$	<i>B (SE)</i>	$\beta$	$\Delta R^2$
Step 1			.00			.02*
Gender	.00 (.94)	.00		-4.71(1.87)	-.15*	
Step 2			.30**			.20**
Gender	1.10 (.90)	.07		.25 (1.90)	.01	
Boldness	-.25 (.05)	-.27***		.81 (.10)	.42***	
Disinhibition	.52 (.06)	.46***		-.04 (.13)	-.02	
Meanness	.09 (.08)	.07		.44 (.17)	.16**	
Step 3			.14**			.03
Gender	.08 (.83)	.01		.28 (1.92)	.01	
Boldness	-.11 (.07)	-.11		.47 (.17)	.25**	
Disinhibition	.28 (.07)	.24***		-.02 (.16)	-.01	
Meanness	.00 (.07)	.00		.48 (.17)	.18**	
Self-efficacy	-.26 (.12)	-.14*		.70 (.29)	.19*	
Impulsiveness	30.12 (.04)	.40***		.07 (.10)	.05	
Positive affectivity	-.12 (.07)	-.10		.10 (.17)	.05	
Negative affectivity	-.04 (.06)	-.04		-.11 (.14)	-.05	
Model $R^2$	.42***			.23***		

*N* = 279

\* *p* < .05

\*\* *p* < .01

\*\*\* *p* < .001

### Discussion

Most studies referring to the differentiation between active and passive procrastination focus on the opposite effects of both forms of delay in the academic sphere (e.g., Wessel et al. 2019). While this perspective may bring interesting results in the field of educational psychology, the phenomenon of procrastination might be additionally explored in alternative contexts (Klingsieck 2013). As most researchers treat procrastination as a trait (van Eerde 2003a), its associations with

personality constructs are of particular relevance, especially in regard to interventions derived from various research on procrastination (Schouwenburg 2004). Consequently, the individual difference approach adopted in this study was aimed at analyzing “dark” dispositional antecedents of two types of procrastination proposed by Chu and Choi (2005). Thus, the present study had two goals: (1) to examine the relationships between separate dimensions of psychopathy distinguished within the triarchic model and distinct categories of procrastination, (2) to examine whether the links of different

**Table 3** Parallel multiple mediation analyses based on 5,000 bootstrap samples

	Independent variable (IV)	Mediating variable (M)	Dependent variable (DV)	Effect of IV on M (a)	Effect of M on DV (b)	Direct effects (c')	Indirect effect (a x b)	Total effects (c)
1	Disinhibition	Impulsiveness	Passive procrastination	.83***	.31***	.22**	.26[.18, .36]	.53***
		Negative affectivity		.40***	.12***		.05[.005, .10]	
2	Boldness	Self-efficacy	Active procrastination	.33***	.65*	.57***	.21[.01, .43]	.80***
		Positive affectivity		.52***	.03		.02[-.16, .19]	

*N* = 280. Bias-corrected 95% confidence intervals are presented in brackets. Confidence intervals not including 0 are statistically significant

\* *p* < .05

\*\* *p* < .01

\*\*\* *p* < .001

dimensions of psychopathy and different types of procrastination were mediated by four individual difference variables, i.e. impulsiveness, general self-efficacy, positive and negative affectivity. Based on the prior research on the dark triad of personality (Lyons and Rice 2014), unique associations between adaptive and maladaptive aspects of psychopathy and procrastination were expected. More specifically, disinhibition was identified as the most plausible positive predictor of passive procrastination, whilst boldness was recognized to be the best candidate for predicting active procrastination. To provide additional insight into these relationships, the potential mediating mechanisms were investigated.

As expected, different psychopathy facets revealed contrasting correlation patterns with two types of procrastination, supporting the notion that psychopathy in triarchic terms is a multidimensional construct whose components manifest themselves in divergent antisocial behaviors (Drislane et al. 2014a; Patrick and Drislane 2015; Patrick et al. 2012). Disinhibition was positively related to passive procrastination, suggesting that both constructs share the same kind of impulsive dysfunctionality. In contrast, boldness displayed a positive link with active procrastination. These findings are in line with previous research on psychopathy in triarchic terms and impulsivity, suggesting that bold individuals, as opposed to those who display disinhibition tendencies, are able to calculate risks and remain calm under pressure from a close deadline (Weidacker et al. 2017). Accordingly, prior research on the relations between psychopathy-related traits and decision-making under risk revealed that boldness was positively linked to risk taking in a gain context, whereas disinhibition was positively linked to risk taking in a loss context (Maes et al. 2018). Thus, the results obtained in the present study seem to support the assumption that boldness embodies potentially adaptive aspects of psychopathic personality which might be displayed in the absence of other dysfunctional psychopathy-related traits, and therefore those high in boldness (i.e., fearless dominance) and low in disinhibition may represent “successful psychopaths” (Lilienfeld et al. 2015; Weidacker et al. 2017). Such psychopathic individuals probably tend to adopt less detrimental task-related strategies and are more likely to self-regulate own behaviors in the academic and organizational context by deliberate planning of own actions. However, future research on samples from the general population is warranted to confirm this assumption.

Contrary to the expectations, in regression analysis, a modest positive link was observed between the third component of psychopathy from the triarchic model, i.e. meanness and active procrastination. This result suggests that meanness plays a certain role as a predictor of engagement of psychopathic individuals in the intentional forms of delay. As meanness involves empathy deficits and shallow affect accompanied by active resource-seeking without regard for feeling and needs of others (Patrick et al. 2012), people possessing this trait are

probably more likely to act in a cold, unemotional and purely instrumental way to get the job done (Weidacker et al. 2017). In reference to procrastination, higher meanness may mean a greater tendency to choose the most beneficial task-related strategy for the individual. Alternatively, considering that in several prior research studies meanness was associated with increased impulsivity and sensation-seeking along with weaker behavioral control (Sellbom and Phillips 2013; Weidacker et al. 2017), the results reported in the current study suggest a positive link between meanness and functional impulsivity. Moreover, the convergence in correlation patterns with active procrastination for both boldness and meanness seems to indirectly confirm the hypothesis by Patrick et al. (2009) that fearless temperament explains the similarities between both domains of psychopathy.

To address the second goal in the current study, two series of parallel multiple mediator models were constructed. As anticipated, in the first mediation analysis, the link between disinhibition and passive procrastination was partially mediated by impulsivity and negative affectivity. These findings provided support for the notion that certain individual differences may explain the underlying mechanism through which individuals with lower behavioral control are prone to engage in dysfunctional forms of procrastination. The observed mediating effect might also indicate that disinhibition leads to an increased tendency to engage in a dysfunctional form of procrastination through greater dispositional impulsivity and negative affectivity. However, as the present research had a cross-sectional character, using an alternative study design (i.e., longitudinal or experimental) in the future would enable researchers to conclude the direction of causality. As the second multiple mediation model showed, the expected mediation effect of positive affectivity on the relationship between boldness and active procrastination was not confirmed. However, as hypothesized, the relationship of boldness with active procrastination was partially mediated via general self-efficacy, suggesting that greater self-efficacy facilitated the tendency to deliberately undertake active delays among individuals displaying high levels of boldness. In general, the mediating role of increased self-efficacy on the relation between boldness and active procrastination might be explained in terms of triarchic theory (Patrick et al. 2009), stressing the possibility that boldness reflects potentially adaptive aspects of psychopathic personality not only in the social context, but also in relation to positive self-beliefs. Furthermore, the results from both mediation analyses suggest that separate paths related to different individual difference attributes lead individuals with psychopathic traits to distinct forms of task delay. Thus, the current study implies that impulsiveness and to a lesser extent negative affectivity trigger the positive relation between disinhibition and passive procrastination by decreasing self-regulation, whereas general self-efficacy plays a crucial role as a mediator between boldness and active procrastination by

enabling the personal belief in own ability to successfully accomplish the task despite a close deadline.

### Limitations, Strengths and Future Directions

The current study has several limitations. Firstly, the concept of active procrastination has been criticized as being contradictory and redundant. Some authors argued that introducing an additional term describing a deliberate delay is unjustified both empirically and theoretically. For instance, Pychyl (2009) and Hensley (2014) understood active procrastination as a positive, intentional, strategic delay rather than procrastination per se, which as a self-regulatory failure is dysfunctional in nature. In line with this view, as Chowdhury and Pychyl's (2018) recent research reveals, active procrastination may be treated as a heterogeneous, higher-order construct, comprising purposeful and arousal delay. Future research should therefore include distinct types of delay combining the adaptational tendency to actively put off tasks. Alternatively, it would be beneficial to use the less controversial notion of "active delay" instead of the contested concept of active procrastination (Corkin et al. 2011). Secondly, the sample in the present study consisted solely of university students. In future it would be worth testing the posited hypotheses in other populations, functioning in non-academic settings. For instance, unique associations between psychopathy described within the triarchic framework and procrastination might be highlighted in institutionalized samples. Additionally, exploring the "dark" personality predictors of active procrastination in the organizational context would enable a better understanding as to how corporate psychopaths succeed in meeting deadlines and might help to implement more effective interventions directed to minimize procrastination. Another potential limitation stems from the reliance on cross-sectional data. Given that complex, intra-individual and motivational processes play a crucial role in procrastination (Grund and Fries 2018; van Eerde 2003a; Steel 2007), further investigations should involve experimental and longitudinal study designs, reflecting this dynamics. Subsequent research may also consider the motivational basis of active and passive procrastination among psychopathic individuals. An additional shortcoming of the present research concerns the applied measurement tools that were based on self-reported data. Moreover, the use of the Active Procrastination Scale (APS) is questioned as in several studies this measure demonstrated an unstable factor structure (Choi and Moran 2009; Chowdhury and Pychyl 2018; Hensley 2014). Consequently, as recent findings proved that changes in the levels of procrastination might be studied in relation to behavioral delay longitudinally (Wessel et al. 2019), future investigations should apply complementary methods with regard to self-reports. In particular, behavioral or observational measures of

procrastination might better capture different aspects and the processual nature of this phenomenon.

Despite these limitations, the present study provides some unique insight into the character of associations between different aspects of psychopathic personality and procrastination in the general population. Combining potentially adaptive and maladaptive elements of psychopathy and procrastination within one research study facilitated the adoption of a wider approach in the analysis of both variables, which were treated as complex, multidimensional constructs, accordingly. The obtained results seem to only partially support the statement that within the triarchic model "successful psychopathy" might be described as a combination of high boldness and low disinhibition (Lilienfeld et al. 2015). The positive correlation between boldness and active procrastination reported in the present study seems to rather confirm the assumption by Patrick et al. (2009, 2012) that mainly this component of psychopathy represents its more adaptive side associated with better adjustment indicators. Accordingly, as active procrastination was unrelated to disinhibition and weakly linked to meanness, low disinhibition, as opposed to boldness and to some extent to meanness, may not play a decisional role in achieving success in completing task on time.

Moreover, significant positive relationships between two dimensions of psychopathy (boldness and meanness) and active procrastination suggest that at least some psychopathic individuals (mainly those high in boldness) are able to behave in a non-impulsive manner in certain conditions. In contrast to disinhibited individuals who tend to unintentionally and impulsively procrastinate, those high in boldness may deliberately risk by delaying necessary tasks to increase stimulation and achieve positive outcomes. These findings are consistent with prior empirical evidence indicating that boldness manifests itself in the tendency to take calculated risk and in the preference for potentially stressful, high-pressure situations, providing opportunity to win (Maes et al. 2018; Weidacker et al. 2017). Another strength of the present study arises from emphasizing not only the direct associations between distinct facets of psychopathy and procrastination, but also analyzing the mediation mechanisms underlying these associations. By identifying individual difference variables mediating the divergent relationships between psychopathy and procrastination constructs, the current study provides some empirical support for the personality perspective on procrastination.

### Conclusions

This study investigated how three dimensions of psychopathy differentiated within the triarchic framework are related to active and passive procrastination, and what underlying mediating mechanisms may explain these relationships. The current findings proved that psychopathy-related traits are



significant predictors of different types of procrastination (c.f. Lyons and Rice 2014). Thus, passive procrastination was positively associated with disinhibition, while active procrastination displayed a positive link with two other components of psychopathy, i.e. boldness and meanness. Further multiple mediation analyses revealed that the relationship between disinhibition and passive procrastination is partially mediated by impulsiveness and negative affectivity, whereas the link between boldness and active procrastination is partially mediated by general self-efficacy. These results suggest that distinct underlying mechanisms may lead different types of psychopathic individuals (i.e., successful or unsuccessful) to engage in different forms of task delay.

## Compliance with Ethical Standards

**Conflict of Interest** The author declares no conflicts of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

- Akhtar, R., Ahmetoglu, G., & Chamorro-Premuzic, T. (2013). Greed is good? Assessing the relationship between entrepreneurship and sub-clinical psychopathy. *Personality and Individual Differences*, *54*(3), 420–425. <https://doi.org/10.1016/j.paid.2012.10.013>.
- Anestis, J. C., Preston, O. C., Harrop, T. M., & Sellbom, M. (2019). The intersection of sociodemographic characteristics within the nomological network of the triarchic psychopathy model in a forensic sample. *Journal of Criminal Justice*, *61*, 13–25. <https://doi.org/10.1016/j.jcrimjus.2019.02.001>.
- Babiak, P., Neumann, C. S., & Hare, R. D. (2010). Corporate psychopathy: Talking the walk. *Behavioral Sciences & the Law*, *28*(2), 174–193. <https://doi.org/10.1002/bsl.925>.
- Boddy, C. R. (2011). Corporate psychopaths, bullying and unfair supervision in the workplace. *Journal of Business Ethics*, *100*(3), 367–379. <https://doi.org/10.1007/s10551-010-0689-5>.
- Brzozowski, P. (2010). *Skala uczuć pozytywnych i negatywnych (SUPIN). Polska adaptacja PANAS. Podręcznik [Polish adaptation of the positive and negative affect schedule (PANAS). Manual]*. Warsaw, Poland: Pracownia Testów Psychologicznych PTP.
- Campbell, M. A., Porter, S., & Santor, D. (2004). Psychopathic traits in adolescent offenders: An evaluation of criminal history, clinical, and psychosocial correlates. *Behavioral Sciences & the Law*, *22*(1), 23–47. <https://doi.org/10.1002/bsl.572>.
- Cao, L. (2012). Examining 'active' procrastination from a self-regulated learning perspective. *Educational Psychology*, *32*(4), 515–545. <https://doi.org/10.1080/01443410.2012.663722>.
- Chen, B. B., & Chang, L. (2016). Procrastination as a fast life history strategy. *Evolutionary Psychology*, *14*(1), 1–5. <https://doi.org/10.1177/1474704916630314>.
- Chiaburu, D. S., Muñoz, G. J., & Gardner, R. G. (2013). How to spot a careerist early on: Psychopathy and exchange ideology as predictors of careerism. *Journal of Business Ethics*, *118*(3), 473–486. <https://doi.org/10.1007/s10551-012-1599-5>.
- Choi, J. N., & Moran, S. V. (2009). Why not procrastinate? Development and validation of a new active procrastination scale. *The Journal of Social Psychology*, *149*(2), 195–212. <https://doi.org/10.3200/SOCP.149.2.195-212>.
- Chowdhury, S. F., & Pychyl, T. A. (2018). A critique of the construct validity of active procrastination. *Personality and Individual Differences*, *120*, 7–12. <https://doi.org/10.1016/j.paid.2017.08.016>.
- Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, *145*(3), 245–264.
- Coid, J., Yang, M., Ullrich, S., Roberts, A., & Hare, R. D. (2009). Prevalence and correlates of psychopathic traits in the household population of Great Britain. *International Journal of Law and Psychiatry*, *32*(2), 65–73. <https://doi.org/10.1016/j.ijlp.2009.01.002>.
- Corkin, D. M., Shirley, L. Y., & Lindt, S. F. (2011). Comparing active delay and procrastination from a self-regulated learning perspective. *Learning and Individual Differences*, *21*(5), 602–606. <https://doi.org/10.1016/j.lindif.2011.07.005>.
- Craig, R. L., Gray, N. S., & Snowden, R. J. (2013). Recalled parental bonding, current attachment, and the triarchic conceptualisation of psychopathy. *Personality and Individual Differences*, *55*(4), 345–350. <https://doi.org/10.1016/j.paid.2013.03.012>.
- Crysel, L. C., Crosier, B. S., & Webster, G. D. (2013). The dark triad and risk behavior. *Personality and Individual Differences*, *54*(1), 35–40. <https://doi.org/10.1016/j.paid.2012.07.029>.
- Donnellan, M. B., & Burt, S. A. (2016). A further evaluation of the triarchic conceptualization of psychopathy in college students. *Journal of Psychopathology and Behavioral Assessment*, *38*(2), 172–182. <https://doi.org/10.1007/s10862-015-9512-z>.
- Drislane, L. E., & Patrick, C. J. (2017). Integrating alternative conceptions of psychopathic personality: A latent variable model of triarchic psychopathy constructs. *Journal of Personality Disorders*, *31*(1), 110–132. [https://doi.org/10.1521/pedi\\_2016\\_30\\_240](https://doi.org/10.1521/pedi_2016_30_240).
- Drislane, L. E., Patrick, C. J., & Arsal, G. (2014a). Clarifying the content coverage of differing psychopathy inventories through reference to the Triarchic Psychopathy Measure. *Psychological Assessment*, *26*(2), 350–362. <https://doi.org/10.1037/a0035152>.
- Drislane, L. E., Patrick, C. J., Sourander, A., Sillanmäki, L., Aggen, S. H., Elonheimo, H., Parkkola, K., Multimäki, P., & Kendler, K. S. (2014b). Distinct variants of extreme psychopathic individuals in society at large: Evidence from a population-based sample. *Personality Disorders: Theory, Research, and Treatment*, *5*(2), 154–163. <https://doi.org/10.1037/per0000060>.
- Edens, J. F., & Campbell, J. S. (2007). Identifying youths at risk for institutional misconduct: A meta-analytic investigation of the psychopathy checklist measures. *Psychological Services*, *4*(1), 13–27. <https://doi.org/10.1037/1541-1559.4.1.13>.
- Eisenbarth, H., Hart, C. M., & Sedikides, C. (2018). Do psychopathic traits predict professional success? *Journal of Economic*

- Psychology*, 64, 130–139. <https://doi.org/10.1016/j.joep.2018.01.002>.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>.
- Fernie, B. A., Kopar, U. Y., Fisher, P. L., & Spada, M. M. (2018). Further development and testing of the metacognitive model of procrastination: Self-reported academic performance. *Journal of Affective Disorders*, 240, 1–5. <https://doi.org/10.1016/j.jad.2018.07.018>.
- Ferrari, J. R., O'Callaghan, J., & Newbegin, I. (2005). Prevalence of procrastination in the United States, United Kingdom, and Australia: Arousal and avoidance delays among adults. *North American Journal of Psychology*, 7(1), 1–6.
- Grund, A., & Fries, S. (2018). Understanding procrastination: A motivational approach. *Personality and Individual Differences*, 121, 120–130. <https://doi.org/10.1016/j.paid.2017.09.035>.
- Grzesiak, M., Beszlej, J. A., & Szechiński, M. (2008). Skala impulsywności Barratta [The Barratt impulsivity scale]. *Postępy Psychiatrii i Neurologii*, 17(1), 61–64.
- Hall, J. R., & Benning, S. D. (2006). The “successful” psychopath: Adaptive and subclinical manifestations of psychopathy in the general population. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 459–478). New York: Guilford Press.
- Hare, R. D. (2003). *The psychopathy checklist - revised*. Toronto, Ontario: MultiHealth Systems.
- Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. *Annual Review of Clinical Psychology*, 4, 217–246. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091452>.
- Hart, S. D., & Dempster, R. J. (1997). Impulsivity and psychopathy. In C. D. Webster & M. A. Jackson (Eds.), *Impulsivity: Theory, assessment and treatment* (pp. 212–232). New York: Guilford Press.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: The Guilford Press.
- Hemphill, J. F., Templeman, R., Wong, S., & Hare, R. D. (1998). Psychopathy and crime: Recidivism and criminal careers. In D. J. Cooke, A. E. Forth, & R. D. Hare (Eds.), *Psychopathy: Theory, research and implications for society* (pp. 375–399). Dordrecht, Netherlands: Kluwer Academic.
- Hensley, L. C. (2014). Reconsidering active procrastination: Relations to motivation and achievement in college anatomy. *Learning and Individual Differences*, 36, 157–164. <https://doi.org/10.1016/j.lindif.2014.10.012>.
- Jones, D. N., & Paulhus, D. L. (2011). The role of impulsivity in the dark triad of personality. *Personality and Individual Differences*, 51(5), 679–682. <https://doi.org/10.1016/j.paid.2011.04.011>.
- Judge, T. A., Piccolo, R. F., & Kosalka, T. (2009). The bright and dark sides of leader traits: A review and theoretical extension of the leader trait paradigm. *The Leadership Quarterly*, 20(6), 855–875. <https://doi.org/10.1016/j.leaqua.2009.09.004>.
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26–33. <https://doi.org/10.1016/j.paid.2015.02.038>.
- Kim, S., Fernandez, S., & Terrier, L. (2017). Procrastination, personality traits, and academic performance: When active and passive procrastination tell a different story. *Personality and Individual Differences*, 108, 154–157. <https://doi.org/10.1016/j.paid.2016.12.021>.
- Klingsieck, K. B. (2013). Procrastination. When good things don't come to those who wait. *European Psychologist*, 18, 24–34. <https://doi.org/10.1027/1016-9040/a000138>.
- LeBreton, J. M., Binning, J. F., & Adorno, A. J. (2006). Subclinical psychopaths. In J. C. Thomas & D. Segal (Eds.), *Comprehensive handbook of personality and psychopathology* (Vol. 1, pp. 388–411). New York: Wiley.
- Lee, Z., & Salekin, R. T. (2010). Psychopathy in a noninstitutional sample: Differences in primary and secondary subtypes. *Personality Disorders: Theory, Research, and Treatment*, 1(3), 153–169. <https://doi.org/10.1037/a0019269>.
- Lilienfeld, S. O. (2018). The multidimensional nature of psychopathy: Five recommendations for research. *Journal of Psychopathology and Behavioral Assessment*, 40(1), 79–85. <https://doi.org/10.1007/s10862-018-9657-7>.
- Lilienfeld, S. O., Waldman, I. D., Landfield, K., Watts, A. L., Rubenzer, S., & Faschingbauer, T. R. (2012). Fearless dominance and the US presidency: Implications of psychopathic personality traits for successful and unsuccessful political leadership. *Journal of Personality and Social Psychology*, 103(3), 489–505. <https://doi.org/10.1037/a0029392>.
- Lilienfeld, S. O., Watts, A. L., & Smith, S. F. (2015). Successful psychopathy: A scientific status report. *Current Directions in Psychological Science*, 24(4), 298–303. <https://doi.org/10.1177/0963721415580297>.
- Lyons, M., & Rice, H. (2014). Thieves of time? Procrastination and the dark triad of personality. *Personality and Individual Differences*, 61, 34–37. <https://doi.org/10.1016/j.paid.2014.01.002>.
- Maes, J. H., Woyke, I. C., & Brazil, I. A. (2018). Psychopathy-related traits and decision-making under risk and ambiguity: An exploratory study. *Personality and Individual Differences*, 122, 190–194. <https://doi.org/10.1016/j.paid.2017.10.017>.
- Malesza, M., & Ostaszewski, P. (2016). Dark side of impulsivity - associations between the dark triad, self-report and behavioral measures of impulsivity. *Personality and Individual Differences*, 88, 197–201. <https://doi.org/10.1016/j.paid.2015.09.016>.
- Mullins-Sweatt, S. N., Glover, N. G., Derefinco, K. J., Miller, J. D., & Widiger, T. A. (2010). The search for the successful psychopath. *Journal of Research in Personality*, 44(4), 554–558. <https://doi.org/10.1016/j.jrp.2010.05.010>.
- Neo, B., Sellbom, M., Smith, S. F., & Lilienfeld, S. O. (2018). Of boldness and badness: Insights into workplace malfeasance from a triarchic psychopathy model perspective. *Journal of Business Ethics*, 149(1), 187–205. <https://doi.org/10.1007/s10551-016-3108-8>.
- Neumann, C. S., & Hare, R. D. (2008). Psychopathic traits in a large community sample: Links to violence, alcohol use, and intelligence. *Journal of Consulting and Clinical Psychology*, 76(5), 893–899. <https://doi.org/10.1037/0022-006X.76.5.893>.
- Patrick, C. J. (2010). Operationalizing the triarchic conceptualization of psychopathy: Preliminary description of brief scales for assessment of boldness, meanness, and disinhibition. *Unpublished test manual, Florida State University, Tallahassee, FL*. <https://patrickcnslab.psu.edu/wiki/images/b/b2/TPMmanual.pdf>. Accessed 21.07.2019.
- Patrick, C. J., & Drislane, L. E. (2015). Triarchic model of psychopathy: Origins, operationalizations, and observed linkages with personality and general psychopathology. *Journal of Personality*, 83(6), 627–643. <https://doi.org/10.1111/jopy.12119>.
- Patrick, C. J., Fowles, D. C., & Krueger, R. F. (2009). Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness. *Development and Psychopathology*, 21(3), 913–938. <https://doi.org/10.1017/S0954579409000492>.
- Patrick, C., Drislane, L. E., & Strickland, C. (2012). Conceptualizing psychopathy in triarchic terms: Implications for treatment. *International Journal of Forensic Mental Health*, 11(4), 253–266. <https://doi.org/10.1080/14999013.2012.746761>.
- Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt impulsiveness scale. *Journal of Clinical Psychology*, 51(6), 768–774. [https://doi.org/10.1002/1097-4679\(199511\)51:6<768::AID-JCLP2270510607>3.0.CO;2-1](https://doi.org/10.1002/1097-4679(199511)51:6<768::AID-JCLP2270510607>3.0.CO;2-1).
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, machiavellianism, and psychopathy. *Journal of*

- Research in Personality*, 36(6), 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6).
- Persson, B. N., & Lilienfeld, S. O. (2019). Social status as one key indicator of successful psychopathy: An initial empirical investigation. *Personality and Individual Differences*, 141, 209–217. <https://doi.org/10.1016/j.paid.2019.01.020>.
- Pilch, I., Sanecka, E., Hyla, M., & Atlas, K. (2015). Polska adaptacja skali TriPM do badania psychopatii w ujęciu triarchicznym [The Polish adaptation of the TriPM scale measuring psychopathy]. *Psychologia Społeczna*, 10, 435–454. <https://doi.org/10.7366/1896180020153506>.
- Poy, R., Segarra, P., Esteller, À., López, R., & Moltó, J. (2014). FFM description of the triarchic conceptualization of psychopathy in men and women. *Psychological Assessment*, 26(1), 69–76. <https://doi.org/10.1037/a0034642>.
- Poythress, N. G., & Hall, J. R. (2011). Psychopathy and impulsivity reconsidered. *Aggression and Violent Behavior*, 16(2), 120–134. <https://doi.org/10.1016/j.avb.2011.02.003>.
- Pychyl, T. A. (2009). Active procrastination: Thoughts on oxymorons. *Psychology Today*. <https://www.psychologytoday.com/us/blog/dont-delay/200907/active-procrastination-thoughts-oxymorons>. Accessed 9 May 2019.
- Schouwenburg, H. C. (2004). Procrastination in academic settings: General introduction. In H. C. Schouwenburg, C. H. Lay, T. A. Pychyl, & J. R. Ferrari (Eds.), *Counseling the procrastinator in academic settings* (pp. 3–17). Washington, DC: American Psychological Association. <https://doi.org/10.1037/10808-001>.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. 35–38). Windsor: NFER-Nelson.
- Schwarzer, R., Jerusalem, M., & Juczyński, Z. (2001). Skala Uogólnionej Własnej Skuteczności - GSES [Generalized Self-Efficacy Scale - GSES]. In Z. Juczyński (Ed.), *Narzędzia pomiaru w promocji zdrowia i psychologii zdrowia [Measuring tools in the promotion and health psychology]* (pp. 93–97). Warsaw, Poland: Pracownia Testów Psychologicznych PTP.
- Sellbom, M., & Phillips, T. R. (2013). An examination of the triarchic conceptualization of psychopathy in incarcerated and nonincarcerated samples. *Journal of Abnormal Psychology*, 122(1), 208–214. <https://doi.org/10.1037/a0029306>.
- Sica, C., Drislane, L., Caudek, C., Angrilli, A., Bottesi, G., Cerea, S., & Ghisi, M. (2015). A test of the construct validity of the Triarchic Psychopathy Measure in an Italian community sample. *Personality and Individual Differences*, 82, 163–168. <https://doi.org/10.1016/j.paid.2015.03.015>.
- Skeem, J., Johansson, P., Andershed, H., Kerr, M., & Louden, J. E. (2007). Two subtypes of psychopathic violent offenders that parallel primary and secondary variants. *Journal of Abnormal Psychology*, 116(2), 395–409. <https://doi.org/10.1037/0021-843X.116.2.395>.
- Skeem, J. L., Polaschek, D. L., Patrick, C. J., & Lilienfeld, S. O. (2011). Psychopathic personality: Bridging the gap between scientific evidence and public policy. *Psychological Science in the Public Interest*, 12(3), 95–162. <https://doi.org/10.1177/1529100611426706>.
- Smith, S. F., & Lilienfeld, S. O. (2013). Psychopathy in the workplace: The knowns and unknowns. *Aggression and Violent Behavior*, 18(2), 204–218. <https://doi.org/10.1016/j.avb.2012.11.007>.
- Smith, S. F., Watts, A., & Lilienfeld, S. (2014). On the trail of the elusive successful psychopath. *The Psychologist*, 27(7), 506–510.
- Snowden, R. J., & Gray, N. S. (2011). Impulsivity and psychopathy: Associations between the Barrett impulsivity scale and the psychopathy checklist revised. *Psychiatry Research*, 187(3), 414–417. <https://doi.org/10.1016/j.psychres.2011.02.003>.
- Spain, S. M., Harms, P., & LeBreton, J. M. (2014). The dark side of personality at work. *Journal of Organizational Behavior*, 35(S1), S41–S60. <https://doi.org/10.1002/job.1894>.
- Stanford, M. S., Mathias, C. W., Dougherty, D. M., Lake, S. L., Anderson, N. E., & Patton, J. H. (2009). Fifty years of the Barratt impulsiveness scale: An update and review. *Personality and Individual Differences*, 47(5), 385–395. <https://doi.org/10.1016/j.paid.2009.04.008>.
- Stanley, J. H., Wygant, D. B., & Sellbom, M. (2013). Elaborating on the construct validity of the Triarchic Psychopathy Measure in a criminal offender sample. *Journal of Personality Assessment*, 95(4), 343–350. <https://doi.org/10.1080/00223891.2012.735302>.
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65–94. <https://doi.org/10.1037/0033-2909.133.1.65>.
- Steel, P. (2010). Arousal, avoidant and decisional procrastinators: Do they exist? *Personality and Individual Differences*, 48(8), 926–934. <https://doi.org/10.1016/j.paid.2010.02.025>.
- Tuckman, B. W. (1991). The development and concurrent validity of the procrastination scale. *Educational and Psychological Measurement*, 51(2), 473–480. <https://doi.org/10.1177/0013164491512022>.
- Van Eerde, W. (2003a). Procrastination at work and time management training. *The Journal of Psychology*, 137(5), 421–434. <https://doi.org/10.1080/00223980309600625>.
- Van Eerde, W. (2003b). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35(6), 1401–1418. [https://doi.org/10.1016/S0191-8869\(02\)00358-6](https://doi.org/10.1016/S0191-8869(02)00358-6).
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. <https://doi.org/10.1037/0022-3514.54.6.1063>.
- Weidacker, K., O'Farrell, K. R., Gray, N. S., Johnston, S. J., & Snowden, R. J. (2017). Psychopathy and impulsivity: The relationship of the triarchic model of psychopathy to different forms of impulsivity in offenders and community participants. *Personality and Individual Differences*, 114, 134–139. <https://doi.org/10.1016/j.paid.2017.03.069>.
- Wessel, J., Bradley, G. L., & Hood, M. (2019). Comparing effects of active and passive procrastination: A field study of behavioral delay. *Personality and Individual Differences*, 139, 152–157. <https://doi.org/10.1016/j.paid.2018.11.020>.
- Williams, K. M., Spidel, A., & Paulhus, D. L. (2005). *Sex, lies, and more lies: Exploring the intimate relationships of subclinical psychopaths*. Paper presented at the meeting of the Society for the Scientific Study of Psychopathy, Vancouver, BC.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.